Utilities System

April 2 | 8 a.m. to 1 p.m. | Hillsborough

Session Description

The Water Treatment Plant treats water from the Eno River to meet state drinking water standards as required by the N.C. Division of Water Resources. The plant also tests the drinking water in its in-house laboratory in order to provide safe, quality drinking water to Hillsborough citizens.

The Wastewater Treatment Plant treats wastewater from the Hillsborough wastewater service area, then discharges treated effluent to the Eno River, as regulated by the N.C. Division of Water Quality. Water quality analyses are performed by an outside laboratory and its in-house laboratory.

During this session, you will receive a tour of the West Fork Eno Reservoir, Water Treatment Plant and Lake Ben Johnston, Mayo Street Water Pump Station, Elizabeth Brady Road Sewer Pump Station, and the Wastewater Treatment Plant.

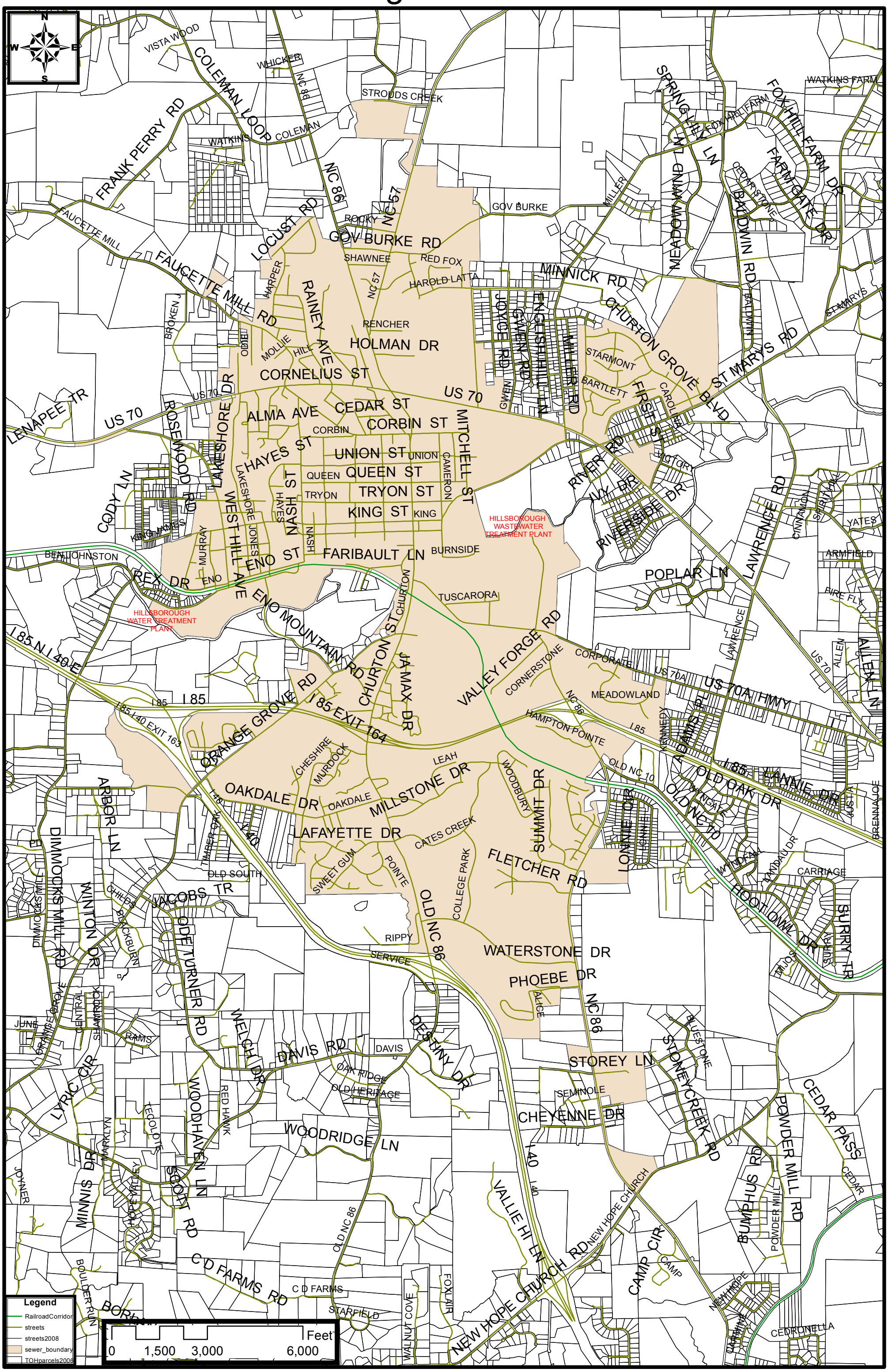
Recommended Readings

- ✓ Map – Sewer Areas (1 page)
- ✓ Map – Water Areas (1 page)
- ✓ FAQ: Water and Sewer Rates (4 pages)
- ✓ 2014 Water Quality Report (4 pages)
- ✓ Things You Can do to Save Water (1 page)
- ✓ Pink Film on Fixtures (1 page)
- ✓ Fiscal Year 2015 Wastewater Quality Report (7 pages)

Other Resources

- ✓ Hillsborough Wastewater Treatment Plant Upgrade Video
- ✓ Hillsborough Fats, Oil and Grease Program Video

Town of Hillsborough Sewer Areas - 10/2013



Town of Hillsborough

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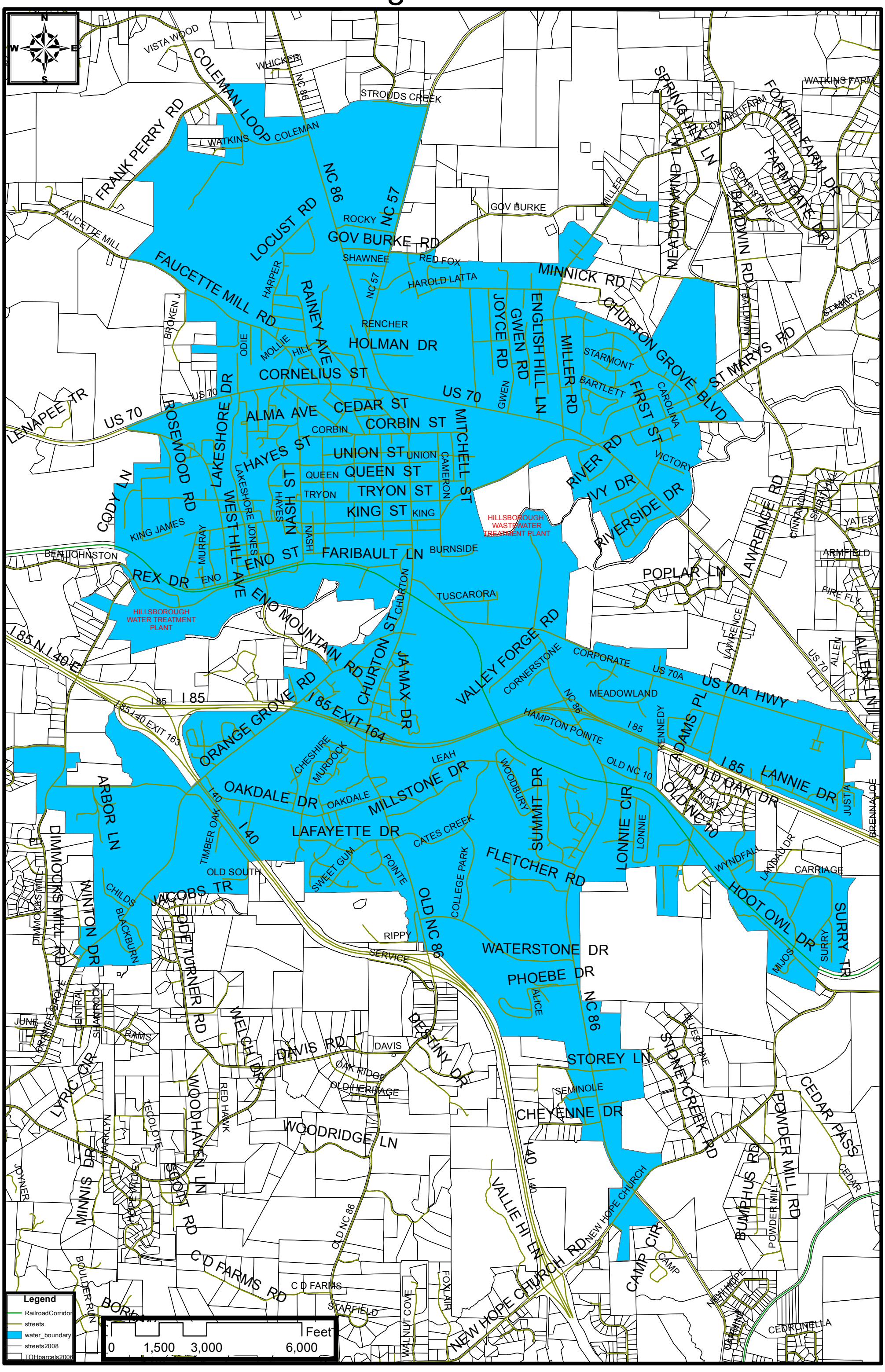
Town of Hillsborough Water Areas - 10/2013



Town of Hillsborough

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FAQ: Water and Sewer Rates

Below are frequently asked questions regarding water and sewer rates. Click on a question to view the answer.

How do our water and sewer rates compare with other communities?
Why are our rates higher than those of some surrounding communities?
Where does the money we pay for water and sewer service go?
Why are out-of-town fees higher than in-town fees?

How do our water and sewer rates compare with other communities?

Hillsborough charges for a minimum usage of 2,600 gallons each billing cycle. Additional use is billed per 1,000 gallons. The rate charged to out-of-town customers is 1.95 times the rate for in-town customers. For in-town and out-of-town rates, see the Utility Fee Calculations on the **Water and Sewer Billing and Collections** page.

Across the State: **A number of systems in the state have higher rates**. In the Neuse River Basin, the watershed in which Hillsborough lies, Hillsborough's rates per 5,000 gallons in January 2015 were:

- Water Rates: Higher than the median by $3.20 for in-town rates and by $13.30 for out-of-town rates
- Sewer Rates: Higher than the median by $2.54 for in-town rates and by $19.99 for out-of-town rates

Around the Triangle: In the Triangle region, comparing in-town rates for customers using 5,000 gallons per month as of January 2015, Hillsborough ranked:

- Water Rates: 9th highest of 42 systems for in-town rates and 4th highest of 32 systems for out-of-town rates
- Sewer Rates: 4th highest of 38 systems for in-town rates and 2nd highest of 28 systems for out-of-town rates
- Combined Water and Sewer Rates: 2nd highest of 36 systems for in-town rates and 2nd highest of 27 systems for out-of-town rates

Note: Most systems with lower rates are within larger communities; these communities have a larger customer base over which the cost of service can be distributed. The source for the above information (*Water and Wastewater Rates and Rate Structures in North Carolina* report) notes that comparing rates is not simple as the cost of service for each utility is based on a number of diverse factors.

Interactive Rates Dashboard: Compare Hillsborough's rates with other water and sewer systems that are in the same basin or regional council of government or that have similar characteristics.

Rates and Rates Structures Report: View the report *Water and Wastewater Rates and Rate Structures in North Carolina*. Included is a section regarding myths about pricing.

Rates Research: View the summary report on rates and rate structures in the state, *Water and Wastewater Rates and Rate Structures in North Carolina*, as well as individual rate sheets for each water and sewer provider that answered a rates survey conducted by the UNC School of Government's Environmental Finance Center and the N.C. League of Municipalities.

Why are our rates higher than those of some surrounding communities?

Hillsborough's rates are higher than some surrounding communities due to:

Terrain: Gravity is the most cost-effective way to transport water; however, Hillsborough's terrain requires the use of many pump stations to keep wastewater flowing to the Wastewater Treatment Plant. The pump stations are expensive to operate, and failures can result in sanitary sewer overflows and fines from the state. Because of its terrain, Hillsborough has more pump stations than a typical municipality. In comparison, per million gallons treated, Hillsborough has three times the number of pump stations as Mebane and nearly 12 times that of Raleigh.

Watershed: Hillsborough is within a watershed that drains into Falls Lake, which has been designated nutrient-sensitive by the N.C. Division of Water Resources, part of the N.C. Department of Environmental Quality, and is on the EPA's list of impaired waters. The state created the **Falls Lake Rules** to protect and restore Falls Lake's water quality. The first stage of **more stringent rules for wastewater discharges** go into effect in 2016 and the second stage in 2036. Recent upgrades at the Hillsborough Wastewater Treatment Plant were constructed in part to meet the Stage 1 wastewater rule. Additional upgrades probably will be required to meet the Stage 2 requirements, likely to be the nation's strictest limits on treated wastewater.

Maintenance Needs: Taking care of the town's infrastructure is one of the guiding principles used in determining the town's budget and financial plan as waiting to address, repair or replace these assets can be more costly in the long term. Nationally, the American Society for Civil Engineers has given federal, state and local governments a D- for drinking water and wastewater infrastructure. In North Carolina, water systems rate a B- and wastewater systems a C+. Little growth in Hillsborough and declining water use over the past 10 years are making it difficult to pay for rebuilding much of the town's aging water and sewer system.

Hillsborough is not alone in facing serious challenges in operating and rebuilding its water and sewer systems. In a **September 2012 article**, USA TODAY reported that its study of residential water rates over the past 12 years found costs more than doubled in a quarter of the systems surveyed nationwide because of crumbling infrastructure and the need for repairs.

In Hillsborough, water and sewer rates are paying for a number of **major projects** and the debt service on those projects. The largest project is the Wastewater Treatment Plant's upgrade and expansion, which was completed in Spring 2014. To avoid a large increase in the sewer rate at one time due to the project's cost, the town spread a necessary rate increase over several years. The annual 8.8 percent sewer rate increase to pay for the plant's Phase 1 expansion and upgrade started in Fiscal Year 2012. The final year for those planned increases is expected to be FY2016.

Critical Savings Level: Because small towns deal with smaller amounts of gross funds, they need larger savings levels to be fiscally sound and to satisfy criteria established by bond rating agencies. A reasonable savings level — also called "fund balance" or "retained earnings" — for a utility is critical to ensure the town does not have cash flow problems and can handle unexpected revenue shortfalls, expenditure overruns and emergencies. The town believes dropping below three months of the annual budget, or 25 percent, is dangerous.

Loss of Large Customer Base: In September 2000, the town's largest water customer at the time (Flynt Fabrics) closed its operations, costing the town about $700,000 per year in revenue. The loss forced the

town to take dramatic action to keep the Water and sewer Fund financially solvent by raising rates by 34.2 percent in 2001 and making expenditure cuts.

The Efland-Cheeks sewer system is expected to disconnect from Hillsborough and become part of Mebane's system. These customers generate about $250,000 (or 7.5 percent) of Hillsborough's sewer revenue. This loss was included in the calculations to maintain a steady increase in rates, rather than a large increase when the customers disconnected.

Where does the money we pay for water and sewer service go?

The majority of **revenue from water and sewer payments** funds:

- Water and sewer operations
- Employees who provide the services
- Debt payments

Cost savings over the years have been shared with the Water and Sewer Fund through:

- Position cuts in the General Fund in fiscal years 2012 and 2013
- Major reductions in the town's wellness program in the FY2013 budget cycle.

Recent Breakdown of Expenses:

In Fiscal Year 2014, the breakdown for water and sewer expenses was:

- 20 percent to operations
- 25 percent to personnel services
- 28 percent to debt service

Note: The Water and sewer Fund budget for debt service payments grew to to 28 percent (about $2.6 million) in 2015 because of debt payments for the Wastewater Treatment Plant.

Why are out-of-town fees higher than in-town fees?

Out-of-town fees are higher than in-town fees due to:

Cost of Service: Customers located farther away from the town's core usually are more expensive to serve because of lower densities and greater distances, on average, from the town's water or wastewater treatment plants. National cost-of-service studies generally find that serving out-of-town customers costs 25 to 75 percent more than serving in-town customers, with typical costs in the range of 45 to 50 percent more.

Investment Risk and Equity: As Hillsborough citizens, in-town customers bear more of the investment risks of owning and operating a utility, and more of the burden of financing and facilitating its operations through their local government, including through paying municipal property taxes. In return, owners of the system pay lower rates to compensate for the additional responsibility not shared by out-of-town customers.

Growth Management: Higher out-of-town charges also are a part of managing growth and annexation. Water and sewer service is a way to attract the type of development and tax base desired by residents.

Lower in-town fees also make annexation more desirable in areas that already have water and sewer service, particularly since annexation would increase property tax rates to provide additional in-town services, such as police protection and garbage collection.

Rationales Often Cited Nationally for Charging Higher Rates to Out-of-Town Customers

Town of Hillsborough

Citizens Academy

2014 WATER QUALITY REPORT

Town of Hillsborough Public Water System ID# 03-68-015

We are pleased to present to you the Hillsborough 2014 Annual Drinking Water Quality Report. This report is a snapshot of last year's water quality. Included are details about from where your water comes, what it contains, and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and to providing you with this information, because informed customers are our best allies. If you have any questions about this report or concerning your water, please contact the Town of Hillsborough Water Treatment Plant at (919) 732-3621. *Please see important notice on last page regarding this report's delivery options.*

When you Turn on Your Tap, Consider the Source

The water that is used by this system is at Lake Ben Johnston on the Eno River and it is located at 1000 Ben Johnston Road. It is considered a surface water and the Town's primary water source. The Town has two secondary water sources, 1) Lake Orange is at 1221 Lake Orange Road in Hillsborough on the East Fork of the Eno River; and 2) the West Fork of the Eno Reservoir at 4210 Efland Cedar Grove Road in Cedar Grove on the West Fork of the Eno River.

Source Water Assessment Program (SWAP) Results

The North Carolina Department of Environment and Natural Resources (DENR), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose of the assessments was to determine the susceptibility of each drinking water source (well or surface water intake) to Potential Contaminant Sources (PCSs). The results of the assessment are available in SWAP Assessment Reports that include maps, background information and a relative susceptibility rating of Higher, Moderate or Lower.

The relative susceptibility rating of each source for the Town of Hillsborough was determined by combining the contaminant rating (number and location of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the well or watershed and its delineated assessment area). The assessment findings are summarized in the table below:

Source Name	Susceptibility Rating	SWAP Report Date
Eno River	Moderate	06/18/2014

The complete SWAP Assessment report for the Town of Hillsborough may be viewed on the Web at: http://swap.ncwater.org/swap_app/pdfreports/0368015_6_18_2014_11_17.PDF. Note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this web site may differ from the results that were available at the time this water quality report was prepared. If you are unable to access your SWAP report on the web, you may mail a written request for a printed copy to: Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email requests to swap@ncmail.net. Please indicate your system name (Hillsborough), PWSID (03-68-015), and provide your name, mailing address and phone number. If you have any questions about the SWAP report please contact the Source Water Assessment staff by phone at 919-707-9098.

It is important to understand that a susceptibility rating of "higher" does not imply poor water quality, only the systems' potential to become contaminated by PCS's in the assessment

Citizen Input Welcome

Citizens are welcome to attend regular Town Board and Water Sewer Advisory Committee meetings. The Town Board meets on the second and fourth Monday of every month, and the Water Sewer Advisory Committee meets bi-monthly on the first Thursday of each even month. All Board and Committee meetings are held in the Town Barn at 7 pm on the Town Hall campus, located at 101 E. Orange St.

New Rule to ensure no presence of Cryptosporidium

The EPA previously implemented a new rule (LT2) as further means to assure the public that the local utility is treating the water appropriately and additional treatment is not needed. Some disease-causing microorganisms and contaminants can be resistant to certain treatment processes, and it is important for the utility to know if the current process being used is effective enough to provide safe drinking water. Hillsborough pulled raw water samples from the Eno River and tested for Cryptosporidium during every month of 2011. The results were as follows: 1 oocysts in January, and none for the remaining months of the year. These results confirmed that Hillsborough's treatment process is more than adequate to meet the safe drinking water standards put in place by the EPA and North Carolina. The next samples will be tested in 2016. Additional information can be found at http://www.epa.gov/safewater/disinfection/lt2.

Cryptosporidium: What exactly is it?

Cryptosporidium is a microbial parasite which is found in surface water throughout the U.S. Although Cryptosporidium can be removed by filtration, the most commonly used filtration methods cannot guarantee 100 percent removal. Our monitoring of our source water and/or finished water indicates the presence of these organisms. Current test methods do not enable us to determine if the organisms are dead or if they are capable of causing disease. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals are able to overcome the disease within a few weeks. However, immuno-compromised people have more difficulty and are at greater risk of developing severe, life- threatening illness. Immuno-compromised individuals are encouraged to consult their doctor regarding appropriate precautions to take to prevent infection. Cryptosporidium must be ingested for it to cause disease, and it may be spread through means other than drinking water.

What EPA (Environmental Protection Agency) Wants You to Know

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly people, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Town of Hillsborough is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses; organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems; and radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Water Quality Data Table of Detected Contaminants

We routinely monitor for over 150 contaminants in your drinking water according to Federal and State laws. The table below lists all the drinking water contaminants that we detected in the last round of sampling for the particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in this table is from testing done January 1 through December 31, 2014.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

Inorganic Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Town Water Results	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
Fluoride (ppm)	4/17/14	N	0.811	0.811	0.811	4.00	4.00	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

Disinfectants and Disinfection By-products Contaminants

Contaminant (units)	MCL/MRDL Violation Y/N	Town Water (AVG)	Range		MCLG	MCL	Likely Source of Contamination
			Low	High			
TTHMs (ppb) [Total Trihalomethanes]	N	43	36	53	N/A	80	By-product of drinking water disinfection
HAA5 (ppb) [Total Haloacetic Acids]	N	33	15	47	N/A	60	By-product of drinking water disinfection

Total Organic Carbon (TOC)

Our water system used Step 1 as the method to comply with the disinfectants byproducts treatment technique requirements.

Contaminant (units)	MCL/TT Violation Y/N	Town Water (AVG)	Range		MCLG	MCL	Likely Source of Contamination
			Low	High			
Total Organic Carbon (ppm) (TOC)-RAW	N	4.75	3.00	9.15	N/A	TT	Naturally present in environment
Total Organic Carbon (ppm) (TOC)-TREATED	N	2.19	1.51	3.29	N/A	TT	Naturally present in environment

Note: Depending on the TOC in our source water, the system MUST have a certain % removal or TOC or must achieve alternative compliance criteria. If we do not achieve that % removal, there is an alternative % removal. If we fail to meet the alternative % removal, we are in violation of Treatment Technique.

Radioactive Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Town Water	MCLG	MCL	Likely Source of Contamination
Beta/photon emitters (pCi/L)	12/6/11	N	5.7	0	50*	Decay of natural and man-made deposits *Note: The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles.

Water Characteristics Contaminants

Contaminant (units)	Sample Date	Town Water	Range Low/High	Secondary MCL
Iron (ppm)	4/17/14	0	N/A	0.3
Sodium (ppm)	4/17/14	25.2	N/A	N/A

Unregulated Inorganic Contaminants

Contaminant (units)	Sample Date	Town Water	Range Low/High	Secondary MCL
Sulfate (ppm)	4/17/14	37.2	N/A	250

Town of Hillsborough
Since 1754

Water Treatment Plant
PO Box 429
711 Dimmocks Mill Road
Hillsborough, NC 27278

Phone: (919) 732-3621
Fax: (919) 732-3774

We're on the Web!
www.ci.hillsborough.nc.us
/content/engineeringutilities
You can also "like" us at
https://www.facebook.com/hillsboroughncwatersewer

IMPORTANT NOTICE

PLEASE NOTE: This report is also available on our Town website at: http://www.ci.hillsborough.nc.us/content/engineeringutilities. HOWEVER, if you would like to receive a printed copy of the report, please contact Julie Laws, Utilities Analyst, at 919-732-1270, ext. 72, and she will mail a copy to you. You may also pick up a copy of the printed report at the Town Hall Annex Office, located at 137 N. Churton Street, or at Town Hall, located at 101 E. Orange Street.

Important Drinking Water Definitions:

Not-Applicable (N/A) – Information not applicable/not required for that particular water system or for that particular rule.
Non-Detects (ND) - Laboratory analysis indicates that the contaminant is not present at the level of detection set for the particular methodology used.
Parts per million (ppm) or Milligrams per liter (mg/L) - One part per million corresponds to one minute in two years or a single penny in $10,000.
Parts per billion (ppb) or Micrograms per liter (ug/L) - One part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.
Picocuries per liter (pCi/L) **-** Picocuries per liter is a measure of the radioactivity in water.
Nephelometric Turbidity Unit (NTU) - Nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
Action Level (AL) - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Treatment Technique (TT) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.
Maximum Residual Disinfection Level Goal (MRDLG) – The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
Maximum Contaminant Level (MCL) - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
Maximum Contaminant Level Goal (MCLG) - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
Extra Note: MCLs are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

Town of Hillsborough

Citizens Academy

Things you can do to save water…

In the bathroom…

1. Shorten your shower. A one or two minute reduction can save up to 700 gallons of water each month. If possible, take a shallow bath instead of a shower for even greater water savings.
2. Replace your showerhead with low-flow showerheads or install flow restrictors.
3. Put trash in the wastebasket, cigarettes in the ashtray - don't flush! Each time you flush a small bit of trash, you waste five to seven gallons of water.
4. Check for leaks in your toilets. Drop a dye tablet in your toilet tank or add a few drops of food coloring - let stand for at least three hours. If the color begins to appear in the bowl without flushing, your toilet has a leak that could be wasting thousands of gallons of water each year. Repair those leaks!
5. When brushing your teeth, wet your toothbrush, then turn off the water.
6. Rinse your razor in a partially-filled sink instead of under a running tap.
7. Check faucets and pipes for leaks. Replace worn washers - even a small drip from a worn washer can waste 20 or more gallons a day. Large leaks can waste hundreds.
8. Put a plastic bottle in your toilet. Fill the bottle with water and a small amount of pebbles (to weigh it down) and place in your tank, away from operating mechanisms. Your plastic bottle can save you 10 or more gallons of water each day.
9. While waiting for your bath water to get warm, place a bucket under the faucet to catch the cold water ("gray water"). Use later to water your house plants, or to refill toilet tank after flushing.
10. Building or remodeling your home? Ask your builder to install ultra-low flush (U.L.F.) toilets and faucets.

In the kitchen and laundry…

11. Keep a bottle of water in the refrigerator for drinking. Don't run the tap waiting for cold water.
12. Rinse vegetables in a pan of water - not under a running tap.
13. Use your dishwasher and washing machine for full loads only.
14. Never leave the water running if you wash dishes by hand. Fill one sink with soapy water and one with rinse water. If you have only one sink, use a dish rack and rinse with hot water.
15. Use the smallest amount of detergent possible when washing dishes by hand. This reduces the amount of rinse water needed.
16. Check your kitchen/bath pipes and faucets for leaks and replace worn washers immediately.
17. Use the garbage disposal less and the garbage can more often. Better yet, compost!
18. Defrost frozen foods in the microwave or refrigerator, instead of under running water.

Make every drop count!

Town of Hillsborough

Citizens Academy

What is the pink film on my fixtures and other surfaces?
A pink film or residue on bathroom and kitchen surfaces generally does not indicate a problem with the water quality. In fact, the pink residue is likely a result of airborne bacteria present in the home that produce a pinkish or dark gray film on surfaces that are routinely moist, such as toilet bowls, showerheads, sink drains, and tiles. Some people have reported that the pink residue appears in their pet's water bowl and fortunately it has not caused harm to the pet and is easily cleaned off. Many experts agree that the bacteria that causes this pink film is most like *Serratia marcescens*, a bacteria which is found naturally in soil, food, and in animals, *Serratia*, which produce a characteristic red pigment, thrive on moisture, dust, and phosphates and need almost nothing to survive. Generally thought to be harmless, recently *Serratia marcescens* has been tied to urinary tract infections, wound infections, and pneumonia in some people.

When does the pink residue occur on fixtures and other surfaces?
The pinkish film often appears during or after construction or remodeling, when dust and dirt containing Serratia bacteria are stirred up. Once the bacteria are airborne, they will seek a moist location where it can proliferate. Some people have reported that the pink residue only appears during certain times of the year, especially when their windows are left open for most of the day. This type of bacteria is present in a number of environments and wind can carry the airborne bacteria or stir up dust in which the bacteria are present. The appearance of the pink residue can be intensified by the use of activated carbon filters, which remove chlorine from the water. The absence of the normal levels of chlorine in tap water allows Serratia to thrive. Because chlorine naturally dissipates from water that is allowed to collect on surfaces, Serratia may proliferate in these areas.

How do I get rid of the pink film on fixtures and other surfaces?
The best solution to this problem is to continually clean the involved surfaces to keep them free from bacteria. Chlorine-based compounds work best, but keep in mind that abrasive cleaners may scratch fixtures, making them more susceptible to bacterial growth. Chlorine bleach can be used periodically to disinfect the toilet and help to eliminate the occurrence of the pink residue. By keeping bathtubs and sinks wiped down and dry, the formation of pink residue can be avoided. Cleaning these surfaces with a solution that contains chlorine will also help to minimize the occurrence of pink residue.

If you have any questions concerning your water quality, call the Town of Hillsborough Water Plant at 919-732-3621.

Town of Hillsborough

Citizens Academy

Town of Hillsborough

ANNUAL WASTEWATER QUALITY REPORT

Fiscal Year 2015 (July 2014-June 2015) Released August 2015

Thank you for reviewing Hillsborough's Annual Wastewater Quality Report! The utilities staff strives to provide efficient and quality service to our customers, and share relevant information to ensure your understanding of our operations.

During Fiscal Year 2015, the following projects were completed or in progress:

- **The sewer crews cleaned over 10 miles of sewer lines, and inspected over 12 miles of sewer line in FY15.**
- **Permanently mounted generators were installed at Gatemoore and Shelton Court Sewage Pump Stations.**
- **The Rencher Street Sewage Pump Station was rebuilt with new pumps, interior components, and electrical improvements.**
- **Began preparations for relining of portions of the Eno River Sewer Outfall, some of which is estimated to be about 50 years old. Rehabilitation work is planned to begin in August 2015. Previous inspections revealed some areas in need of repairs, but most of the piping in good condition.**

The sewer collection personnel continually evaluate and maintain our system of sewer manholes, pipes, and pump stations to ensure that the system is operating properly, and to prevent spills. Likewise, the wastewater treatment plant personnel operate and maintain the plant to ensure compliance with our wastewater discharge and biosolids permits for the 24/7/365 operation of the treatment facility.

Thanks again for your review of this report! Also, please consider "Liking" our Utilities page on Facebook at *www.facebook.com/hillsboroughncwatersewer* to stay informed about the operations of our entire utilities system.

Kenny P. Keel, P.E., Town Engineer/Utilities Director

Permit Information

Collection System

Permit No. WQCS00077

Will Baker, Assistant Utilities Director/ORC

919/732-9459

Wastewater Treatment Plant

Permit No. NC0026433

Jeff Mahagan, Plant Superintendent/ORC

919/732-2681

Collection Systems Management

The Town's underground water utilities consist of a maze of pipes, valves, and pumps. The system that distributes the drinking water to the customers is called the distribution system, and the system that collects the wastewater and transports it to the wastewater treatment plant is called the collection system. Hillsborough's collections system is made up of 90 miles of pipe, 1,917 manholes, and 24 pump stations. Five employees are responsible for the day-to-day operations of the system.

Every year the staff must hydraulically clean and inspect a minimum of 10 percent of the gravity lines in the system (9 miles). The gravity lines are inspected using a closed-circuit television camera that produces a film on digital video disc. The video is used to locate areas where the lines are failing or need maintenance. Additional staff duties include: mowing and inspecting sewer easements twice per year, maintaining and operating the pump stations, and responding to any emergencies that might happen during the day or at night. Most emergency responses are for pump station problems.

Whenever possible, gravity is by far the most cost-effective way to transport water. However, pump stations are often necessary to keep the wastewater flowing to the wastewater treatment plant. Pump stations are very expensive to operate, and failures can result in sanitary sewer overflows and fines.

Unfortunately, Hillsborough has many more pump stations than a typical municipality. Hillsborough has three times the number of pump stations per million gallons treated when compared to Mebane, and nearly twelve times more than Raleigh, due mostly to our rolling terrain.

Within the past five years, two pump stations have been successfully eliminated as a result of the Waterstone development project. Three other pump stations have been substantially upgraded; one as part of the Waterstone project, and the other two as part of Town financed projects on Elizabeth Brady Road and Rencher Street.

Collection Systems Performance

Number of Pump Stations:	24
Miles of Gravity Sewer in System:	76.85
Miles of Sewer Force Main:	16.11
Miles of Public Gravity Sewer Root Treatment:	1.21
Miles of Pipe Cleaned/Videoed:	12.00
Miles of Public Sewer Smoke Tested:	3.00
Number of Manholes:	1,917
Number of Manholes Inspected:	475
Number of Manholes Relined:	5

Sanitary Sewer Overflows

FY15

Spill #	Date	Location	Cause of Spill	Spill Volume (gal)	Volume Reaching Surface Water (gal)
1	01/20/2015	Bellevue Outfall	Debris in Line	1,350	1,350
2	03/20/2015	Spruce Street	Roots, Grease	300	300

Wastewater Treatment

The wastewater treatment plant provides service for all of Hillsborough and several of the surrounding communities. The plant has the capacity to treat up to a maximum monthly average of 3.0 Million Gallons per Day. Currently the plant is operating at slightly under half capacity.

Wastewater treatment is accomplished through a series of treatment processes and stages: preliminary treatment, secondary treatment (5-stage biological nutrient removal), tertiary treatment (filtration), disinfection, dechlorination, post-aeration, and solids processing.

After the treatment processes are complete, the water is released back into the Eno River, and the stabilized waste solids (biosolids) are beneficially reused as a soil amendment/fertilizer on several neighboring agricultural fields or transported to a composting facility.

Wastewater Plant Permits

The wastewater plant operates under state issued permits. State regulators enforce these permits through review of required reports and inspections of facilities. Non-compliance with any part of the permit may result in a Notice of Violation (NOV). An NOV may also include fines of up to $25,000 per day per violation. The Town's wastewater plant received no NOVs in FY15.

- National Pollutant Discharge Elimination System Permits
  - Wastewater Discharge No. NC0026433
  - Stormwater Discharge No. NCG110000
- North Carolina Division of Water Quality Permits
  - Residuals Land Application No. WQ0000011
  - Laboratory Certification Certificate No. 121

Our Mission

To protect, preserve, and enhance the Eno River by managing the wastewater treatment processes in an efficient and economical manner.

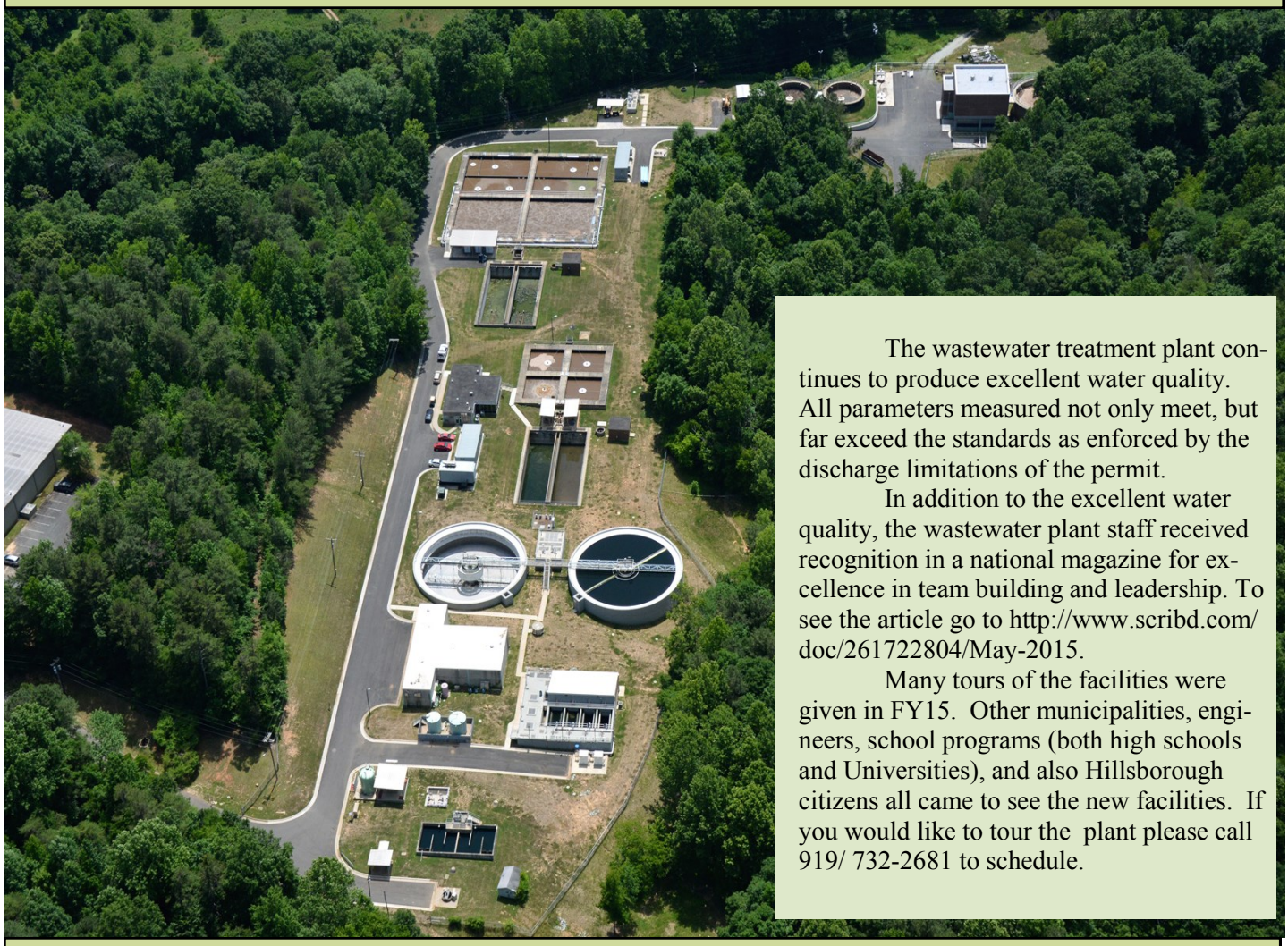
Our Vision

Instill in our customers a sense of pride and contentment—knowing that their local wastewater utility is diligently working to provide outstanding environmental protection for today, and for the future generations to come.

Our Objectives

- Provide good stewardship of the resources entrusted to us by the Town of Hillsborough residents and customers.
- Treat the wastewater to a quality that provides a healthy environment for the Eno River aquatic life, the downstream recreational users, and the downstream drinking water supplies.
- Manage the Biosolids program in a way that is beneficial to both the environment and the local farmers that use the product.
- Proactively work with pertinent local and state agencies, organizations, and individuals to monitor and protect the region's water, soil, and air environments.

Wastewater Treatment Performance



The wastewater treatment plant continues to produce excellent water quality. All parameters measured not only meet, but far exceed the standards as enforced by the discharge limitations of the permit.

In addition to the excellent water quality, the wastewater plant staff received recognition in a national magazine for excellence in team building and leadership. To see the article go to http://www.scribd.com/doc/261722804/May-2015.

Many tours of the facilities were given in FY15. Other municipalities, engineers, school programs (both high schools and Universities), and also Hillsborough citizens all came to see the new facilities. If you would like to tour the plant please call 919/ 732-2681 to schedule.

Facility Performance

- No Violations of any permit in FY15
- Non-compliances
  - July 2014 - Due to a documentation error, an analysis of Total Suspended Solids was not completed.

INSPECTIONS

- Passed NC facility inspection
- Passed NC laboratory inspection
- Passed NC stormwater inspections

	PERMIT LIMIT	2014 ACTUAL	2013 ACTUAL	2012 ACTUAL
Avg Daily Flow	n.a.	0.935	0.921	0.834
Max Month Flow	3.0 mgd	1.299 mgd	1.142 mgd	1.003 mgd
BOD	5.0 mg/L	<2.0 mg/L	<2.0 mg/L	<2.0 mg/L
Ammonia (as N)	2.0 mg/L	<0.1 mg/L	<0.1 mg/L	<0.1 mg/L
Total Nitrogen	50,228 lb/yr	6,670 lb/yr	18,312 lb/yr	19,848 lb/yr
Total Phosphorous	2.0 mg/L	1.073 mg/L	0.965 mg/L	0.857 mg/L

Protect Your Home and Environment
from Damaging Fats, Oils and Grease

Waste food and grease are often washed into the plumbing system through kitchen sinks. The grease sticks to the insides of sewer pipes (both in your home and in the streets), and over time it can build up to the point that it blocks the entire pipe.

Commercial additives, including detergents, that claim to dissolve grease may only pass grease down the line and cause problems in other areas.

The results of blocked pipes can be:

- Raw sewage overflowing in your home or your neighbor's home—resulting in expensive and very unpleasant cleanups.
- Raw sewage overflowing into parks, yards and streets.
- Potential human contact with disease-causing organisms.
- **Higher sewer bills** for customers.

How Can You Help?

- **Never pour grease or used cooking oil down sink drains or into toilets.**
- **Dispose/recycle used cooking oil at:**

  Orange County Household Hazardous Waste

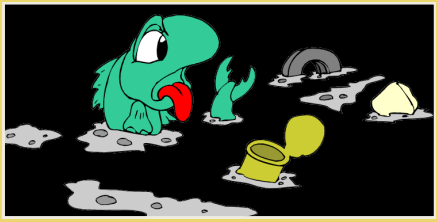
  1207 Eubanks Road, P. O. Box 17177, Chapel Hill, NC 27516

  Phone: (919) 968-2788 Email: recycling@co.orange.nc.us

  Hours are: 10 a.m. to 6 p.m. Monday-Friday, 8:00 a.m. to 12:00 noon Saturdays
- **Scrape grease and food scraps from trays, pots, pans, utensils, grills and cooking surfaces into a can or the trash for disposal (or recycling where available).**

"WHAT'S HAPPENIN' HILLBOROUGH?"

CLICK HERE



FY15 Summary

The Town of Hillsborough Utilities Department strives to protect the environment through the proper collection and treatment of wastewater. We continually look for ways that our systems can be improved, and implement ideas into our budget and workload.

A couple of innovative methods of system improvement are in progress or planned in the near future. One of those improvements is the relining of existing sewer mains. In the relining process, a PVC liner is inserted into the existing sewer pipe and pulled from one manhole to another. The liner then is injected with steam, causing it to open. The steam pressure and heat seals the liner in place against the walls of the pipe, creating a slightly smaller pipe within the original one. This process seals off cracks and other small openings in the original pipe to eliminate the infiltration of groundwater into the sewer system.

Another improvement that is planned for Fall 2015 is a small pipe bursting and replacement project. An old sewer pipe that serves several downtown businesses has experienced some recent capacity problems. The pipe crosses Churton Street, so conventional digging and replacement would be extremely disruptive to traffic. The plan for improvement is to use specialized equipment to burst the existing pipe, expanding its diameter, then pulling a new larger pipe through the opening. Holes are required to be dug at each end to launch and receive the bursting equipment, which is much less disruptive than digging up the entire pipe.

As noted elsewhere in this report, we have made several improvements to our collection system over the past year. With 24 sewage pump stations around our service area, we try to make improvements to at least one of them each year to keep them all in top working condition. Since pump stations are typically a common source of system failure (due to their mechanical operation), much effort and expense goes into their operation and maintenance. Adding generators to pump stations, as we did most recently at two locations, ensures that sewage is pumped to the wastewater treatment plant even when the power is out.

Hillsborough is now in its tenth year of using the balanced scorecard system to implement and communicate the Town Board's mission, vision, strategic priorities and core values. The scorecards are a response to the Board's strategy map via initiatives, performance measures, and targets pursued by departments in their daily operations. This system was designed to help the organization become more analytical, adaptive, and responsive to the lessons it learns while trying to achieve its goals. Strategies are tested through trial and error via the performance measures in the scorecards. These businesslike techniques (used by more than half of the Fortune 1,000 companies) determine how to prioritize needs and allocate Town resources.

Thank you for your support and interest in the Hillsborough Wastewater Collection and Treatment Systems. We welcome your comments and questions throughout the year.

Availability & Certification

This report is available on the town's website (www.ci.hillsborough.nc.us). If you would like a copy of the report please contact Julie Laws, Utilities Analyst, at 919-732-1270, ext. 72. Customers were notified of this report in the two local papers, The News of Orange County and The Chapel Hill Herald.

Certification:

I certify under penalty of law that this report is complete and accurate to the best of my knowledge. I further certify that this report has been made available to the users or customers of the named system and that those users have been notified of its availability.

Kenneth P. Keel, P.E. Town Engineer/Utilities Director